

CERES Data Management System

Items for Discussion - September 1998

Events since last Science Team Meeting

TRMM Operations and Processing

Working Group Status

Current Processing Issues

Near-term Plans

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PDF Version: http://asd-www.larc.nasa.gov/ceres/science_team/quart_rept.html

Events since last Science Team Meeting

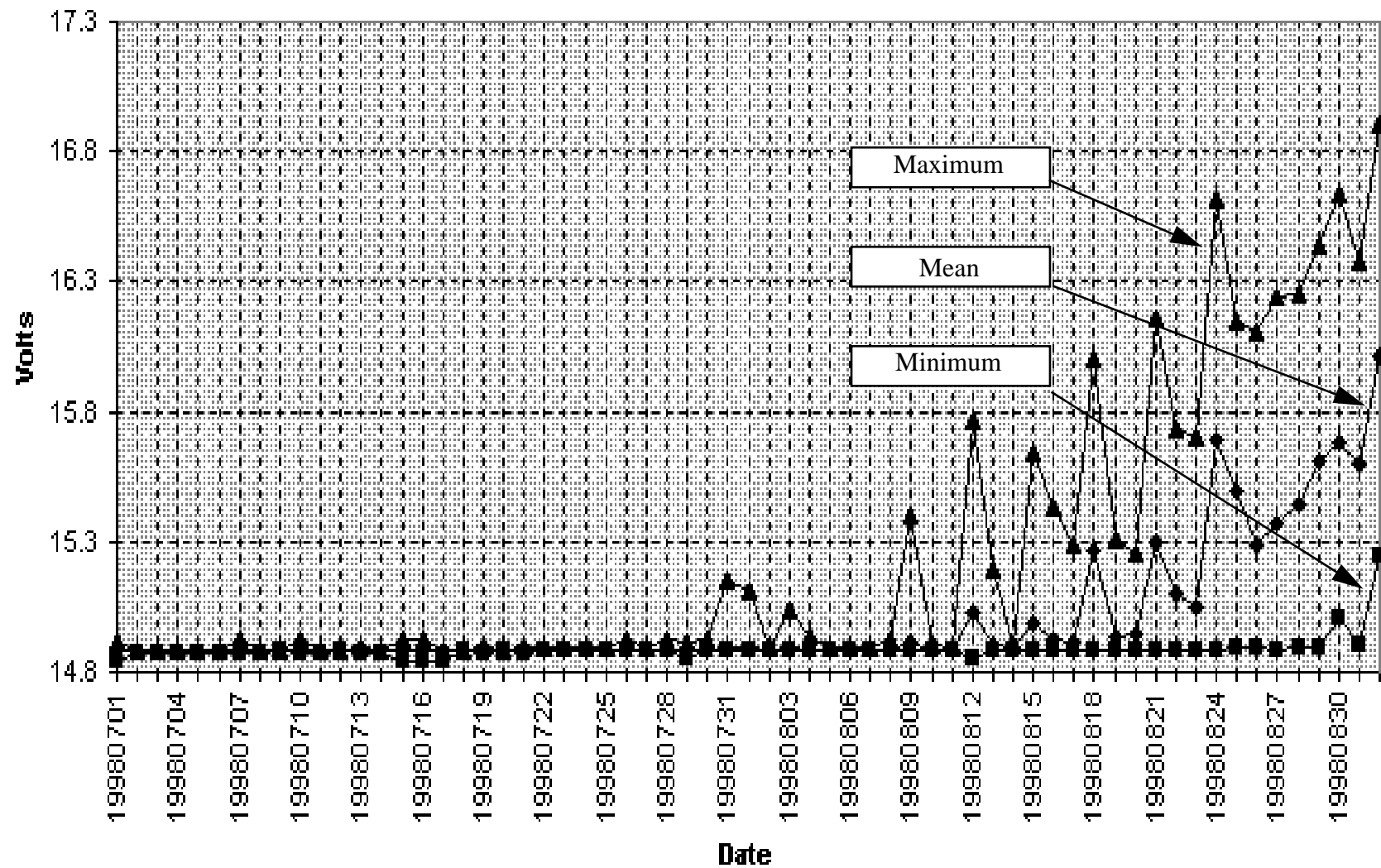
- **Release 2 Data Management System deliveries to the DAAC continue with updated subsystem software about every 2 months**
- **TRMM Instrument Support Terminal used to monitor special instrument operations**
- **TRMM Instrument Simulator used to check new scan profile**
- **Special instrument operations performed during last six months**
- **Instrument and ERBE-like subsystems running daily at DAAC using the LaRC TRMM Information System (LaTIS)**
- **Cloud/Inversion and SARB subsystems completed month of January 1998 for validation.**
- **TISA subsystems finally have a month of data to process**
- **Data Sets available to the Science Team through the DAAC ordering system**
 - **BDS Edition1 Level 1 Instrument**
 - **ES-8 Edition1 Level 2 ERBE-Like**
 - **ES-9 Edition1 Level 3 ERBE-Like**
 - **ES-4 Edition1 Level 3 ERBE-Like**
 - **SSF ValidationR2 Level 2 Clouds/Inversion**
 - **CRS ValidationR2 Level 2 SARB**

TRMM CERES Activities to Support the Science Mission

- **April 23 - Implemented alongtrack scan operation**
 - Performed every 15 days - every fifth day of biaxial operation
 - Requires extensive Sun-avoidance commanding
 - Many commands initially typed in by the TRMM FOT - now automated
 - Commands manually checked by LaRC personnel
- **July 16 & 17 - Ten special internal calibrations performed**
 - Calibrations performed during Sunlight and shadow
 - Normal and abbreviated sequences
 - During cross-track and biaxial scan operation
- **August 8 - 28 - Special crosstrack operations over Oklahoma ARM site**
 - Selected orbits on RAPS days commanded to crosstrack over ARM site during daylight
- **August 18 - DAA +15volt yellow high limit triggered**
 - Analysis showed over-voltage degradation beginning July 31 and steadily increasing
 - LaRC personnel performed extensive analysis to identify causes
 - Daily teleconferences with TRW and LaRC personnel to derive recovery actions
- **August 28 - First test of new scan profile**
 - Similar to normal crosstrack earth scan profile with no internal calibration
- **September 1 - CERES instrument powered off due to red-limit trigger**
 - Science data prior to turn-off does not appear to be affected
 - Participating in tiger team to investigate problem
- **September 2 - Withdrew from TRMM Deep Space Manuever planned for one orbit**

Summary of in-orbit operation: http://asd-www.larc.nasa.gov/dsnyder/initial_ops.html

DAA +15Volt Daily Statistics



External Interfaces and Mission Operations

Responsible for:

- **Negotiations with GSFC, EOS, and TRMM Projects**
- **Coordination with Langley CERES Project Office and TRW**
- **TRMM and EOS Instrument monitoring, real-time displays, instrument health and status**
- **Software to distribute/analyze housekeeping data from TRMM ISW to LaRC workstations**

TRMM:

- **Microprocessor upload with a new elevation scan profile was submitted to the GSFC MOC via the TRMM IST**
- **The new elevation scan profile was tested on August 28th**

EOS-AM1:

- **Flight Operations Segment (FOS) mission operations software developed by Lockheed had major malfunctions. Lockheed is modifying the software to correct problems**
- **GSFC is exploring possibility of using other software to support EOS-AM1 mission operations**
- **A script was developed to perform CERES early orbit checkout procedures. The script was tested against the EOS-AM1 spacecraft simulator on September 2nd**
- **The EOS Project Office is working on an integrated schedule for upcoming EOS-AM1 simulations and launch preparation activities**

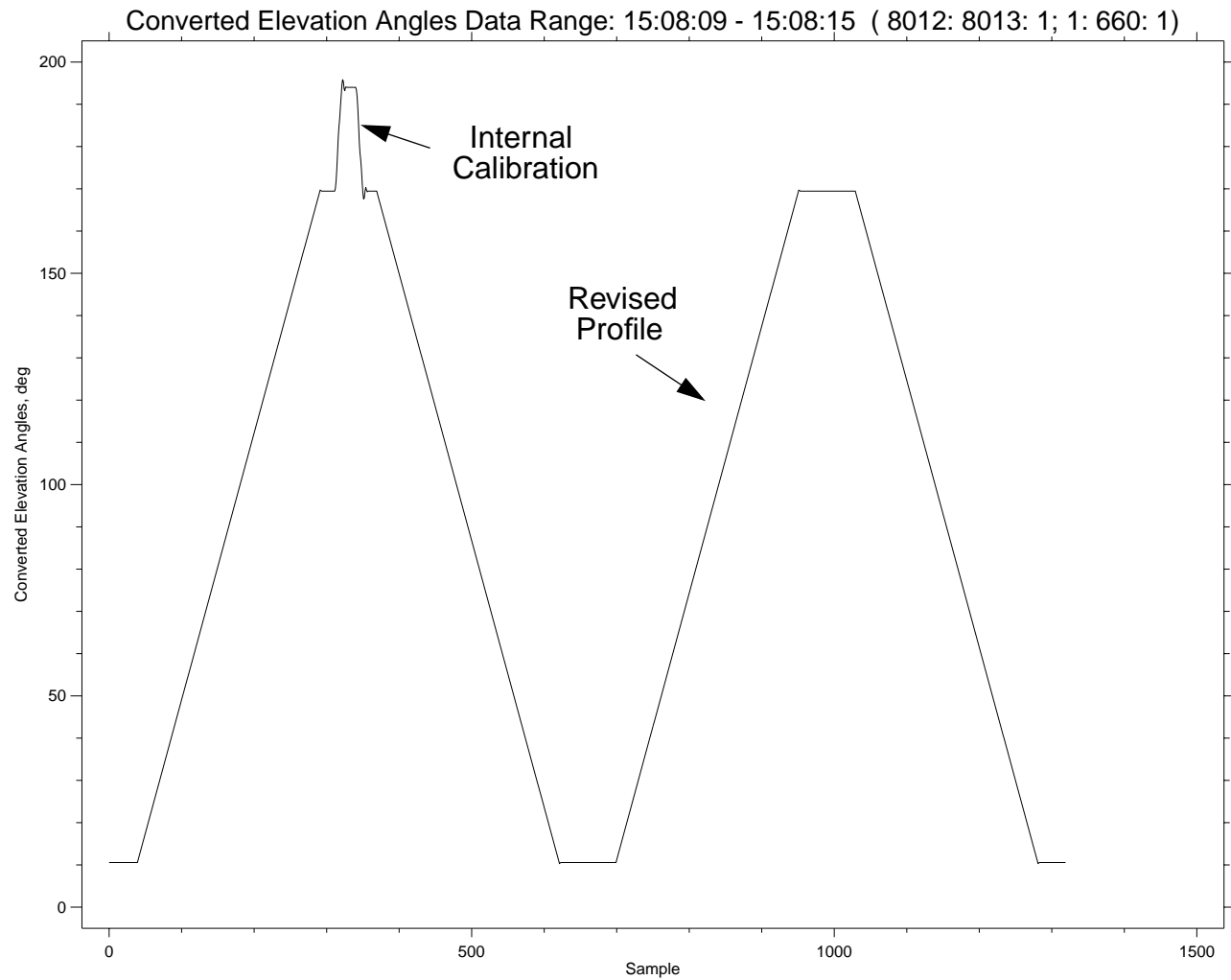
Near-term Plans:

- **Continue to work flight operations details with TRMM and EOS-AM personnel**

Revised Normal Earth Scan Profile

Eliminated internal calibration position in middle of scan to determine effect on offsets

Tested on August 28, 1998 at 15:08 UT



/QA/CERES/instrument/data/out_comp/CER_BDS_TRMM-PFM_Edition1_008000.19980828 Date:Wed Sep 9 15:44:27 1998

CERES Instrument Simulator

Platform specific CERES Instrument simulation system for validation of re-programming and in-flight anomaly investigation

Current TRMM Status:

- **Fully functional TRMM CERES instrument simulator operational since launch**
- **Used regularly to check instrument software uploads**
- **Alongtrack Scan command developed and tested**
- **Symmetric Short Scan Sequence developed and tested**
- **Normal "No-cal" Scan sequence developed and tested**
- **TRW BCU ver 1.5 software Long Command checksum anomaly cleared**
- **Zip drive test profile archive now functional**

Current EOS-AM1 Status:

- **Simulator electronics cards (ICP, DAP, DIO and SC/IF) ready for installation in enclosure**
- **Interrupt driven I/O cards successfully link Matlab/Simulink elevation and azimuth gimbal models to CERES embedded processors**
- **Host-PC software: Reuse Virtual Instrument rate and position I/O drivers**
- **Pentium 233 MHz runs BCU version 4.x software**
- **EOS-AM1 flight code for FM2 loaded into 27C64 EPROMs and installed in simulator**
- **FM1 flight code can be uploaded when necessary**

Near-term Plans:

- **Functional checking of EOS-AM1 system in final enclosure**

Working Group: Instrument

Responsible for:

- **Subsystem 1 (Instrument Geolocate and Calibrate Earth Radiances)**

Data Products:

- **BDS (Bi-Directional Scan)**
- **IES (Instrument Earth Scan)**

Current Status:

- **Processing TRMM data on a daily basis; performing quality assessment activities**
- **Monitoring instrument and spacecraft on a daily basis**
- **Implemented initial EOS-AM1 packet formats, using Level-0 data generated by Mini-EDOS**
- **Working with LaRC DAAC on EOS-AM1 file renaming and EOS-AM1 production rules**
- **Held peer review of BDS Collection Guide; incorporating review comments**
- **Completed Draft Operator's Guide; submitted to System Engineering Committee**
- **Completed Draft User's Guide for view_hdf, IDL viewing/analysis tool for HDF output products; incorporated review comments, added hyperlinks, posted on web, and delivered to DAAC**
- **view_hdf tool and User's Guide made available for CERES Co-I's**
- **Added instrument housekeeping daily average time-history data to Web Page;
URL = <http://lposun.larc.nasa.gov/ceresweb/index.html>**

Near-term Plans:

- **Automating the coastline detection algorithm**
- **Add QC Reports to web page**
- **Need complete definition of EOS-AM1 Ephemeris/Attitude and Level-0 data generated by EDOS**
- **Continue testing of EOS-AM1 software as data become available**
- **Accommodate ERBE-like and Cloud processing requirements**

Working Group: ERBE-like

Responsible for:

- **Subsystem 2 (ERBE-like Inversion to Instantaneous TOA Fluxes)**
- **Subsystem 3 (ERBE-like Averaging to Monthly TOA Fluxes)**

Data Products:

- **ES-8 (Equivalent to ERBE Instantaneous TOA Estimates)**
- **ES-9 (Monthly Averaged Regional Parameters)**
- **ES-4 (Monthly Averaged Regional, Zonal, Global Parameters)**
- **Scene ID, Spectral Correction, and ADM Ancillary Input Data Files**
- **Albedo Directional Model File**
- **ES-8 and ES-4 Browse Products**

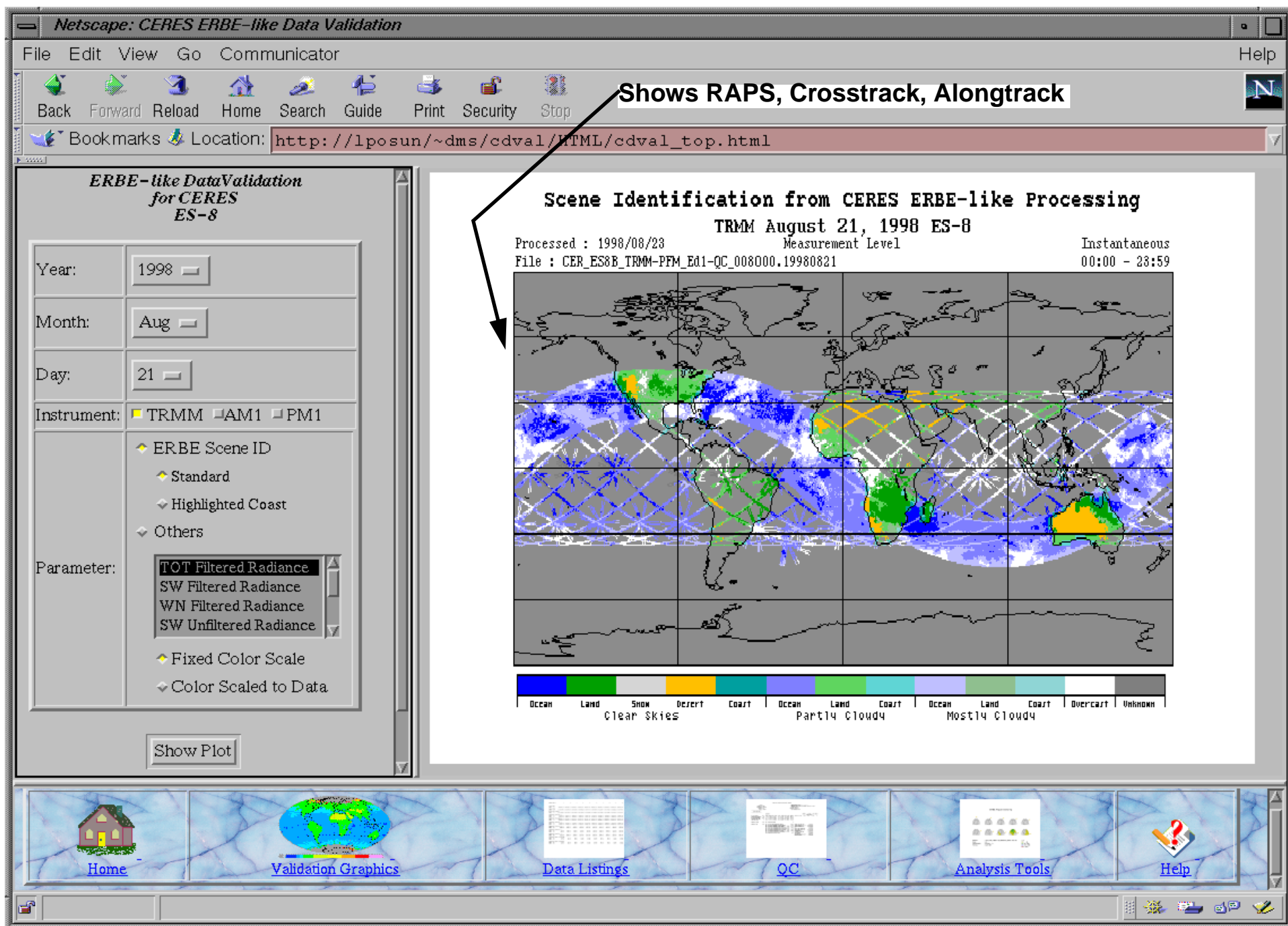
Current Status:

- **New Spectral Correction Coefficients provided by Science Team**
- **New A's and B's for the Longwave Tropical Constant validation algorithm**
- **New post-processor to generate ES-9 HDF product**
- **Overlap data files created with current month's snow data**
- **Produced FAPS, RAPS, and FAPS+RAPS monthly output files off-line for comparison studies**
- **Ready to process FAPS+RAPS together**
- **ERBE-like Web site contains snow data, ES-8, and ES-4 browse products, QC Plots, QC Reports, and Product Listing access capability (used for internal validation only)**
- **Incorporating comments from BDS Collection Guide review into ES-8 Collection Guide**
- **Processed TRMM data for January 1998 through August 1998 at Langley DAAC**

Near-term Plans:

- **Complete ES-9 and ES-4 Collection Guides**
- **Complete ES-8, ES-9, ES-4 HDF validation code**
- **Generate new Spectral Correction Coefficients for unfiltering the window channel**
- **Generate new A's and B's that are independent of the window channel spectral width**

ERBE-Like QC graphics and reports available on the web



Working Group: Clouds

Responsible for:

- **Subsystem 4.1 - 4.3 (Clear/Cloud Detection, Cloud Layers, Optical Properties)**
- **Subsystem 4.4 (Convolution with CERES Footprint)**

Data Products:

- **SURFMAP (Surface Map and Properties)**
- **VIRS & MODIS & AVHRR (Cloud Imager Data)**
- **CRH (Clear Reflectance/Temperature History)**
- **Intermediate SSF (Single Satellite Footprint - Cloud Properties)**

Current Status:

- **F90 production code running on SGI in 64-bit mode, Irix 6.4 using Toolkit 5.2.3, HDF, Cereslib**
- **Delivered the latest version of the code to the DAAC on June 26, 1998. Includes:**
 - **A new version of the CERES Cloud Mask algorithm (day and night)**
 - **Hourly VIRS calibration coefficients**
 - **Calculated VIRS reflectances at night**
 - **Improved CRH start-up and emissivity maps of MOA parameters**
 - **Modifications allowing use of NCEP-derived MOA data**
 - **Converted geodetic latitude to geocentric without using ephemeris file**
 - **Included surface type summations for QC**
- **The DAAC successfully processed the VIRS data and produced interim SSFs for January 1998 for 725 of 744 hours (97%). All failed hours successfully processed at the SCF**
- **VIRS calibration study completed using January - March 1998 samples. Validating Jan 98 SSFs.**

Near-term Plans:

- **Include improved nighttime cloud property algorithm (VINT) and cloud mask QC flag**
- **Assist with timing problems in nighttime VINT algorithm**
- **Prepare EOS-AM1 pre-launch delivery to incorporate the latest algorithms, the MODIS interface, ability to handle two IES inputs, and use the improved native SGI F90 compiler.**
- **Validate SSF cloud properties and layers.**

Clouds/Convolution QC graphics and reports available on the web

File Edit View Go Bookmarks Options Directory


Back Forward Home Reload Images Open Print


Location: <http://lposun.larc.nasa.gov>

What's New? What's Cool? Destinations

Welcome to QC Displayer

This program accesses binary QC files located at /QA/CERES/clouds/data/out_comp/QA_Reports/ and displays them in ASCII format. To search for a specific file click on Target Search or for a list of available files click on Browse.

[Target Search](#)  [Browse QC Files](#)

[View Comments](#)  [Add Comments](#)

Cloud Retrieval URL:

<http://lposun.larc.nasa.gov/~cwg>

Convolution URL:

<http://lposun.larc.nasa.gov/clouds>

Portions of the SSF QC Data Product

Select the data file you wish to inspect:

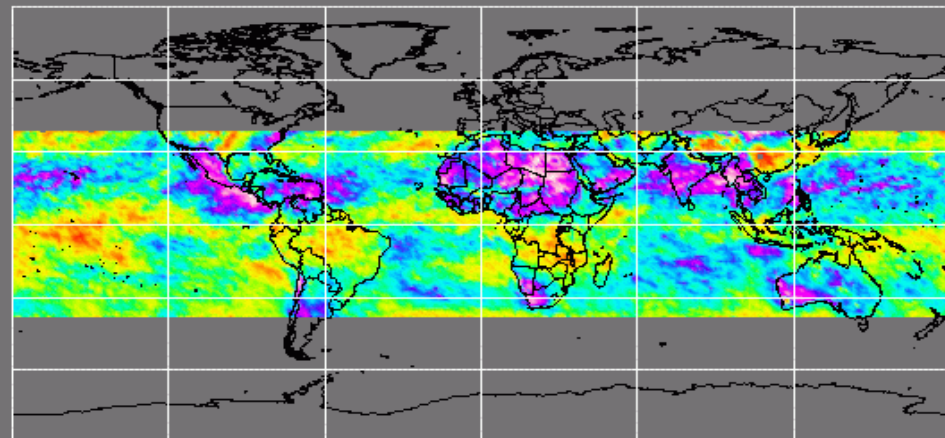
Year:	Month:	Day:	Hour:	Strategy:
1998	Jan	02	06	ValidationR2

☐ Header Information
☐ General Information
☐ Radiances at Nadir

---- Sunglint summations on colatitude zones----

CoLatitude	0	1-25	26-50	51-75	76-99	100	Bad
50 - 60	44823	240	45	22	0	0	0
60 - 70	35400	442	163	135	114	16	0
70 - 80	26466	679	278	231	416	459	0
80 - 90	25756	150	115	136	100	2	0
90 -100	24207	0	0	0	0	0	0
100 -110	14361	0	0	0	0	0	0
110 -120	4678	0	0	0	0	0	0

CER_EGCVD_TRMM-VIRS_ValidationR2_010000.199801 Day Time: Clear



Percent clear during January 1998 daytime

Working Group: Inversion and Surface Estimation

Responsible for:

- **Subsystem 4.5 (CERES Inversion to Instantaneous TOA Fluxes)**
- **Subsystem 4.6 (Estimate Longwave and Shortwave Surface Radiation Budget)**

Data Product:

- **Archival SSF (Single Satellite Footprint, TOA and Surface Flux, Clouds)**

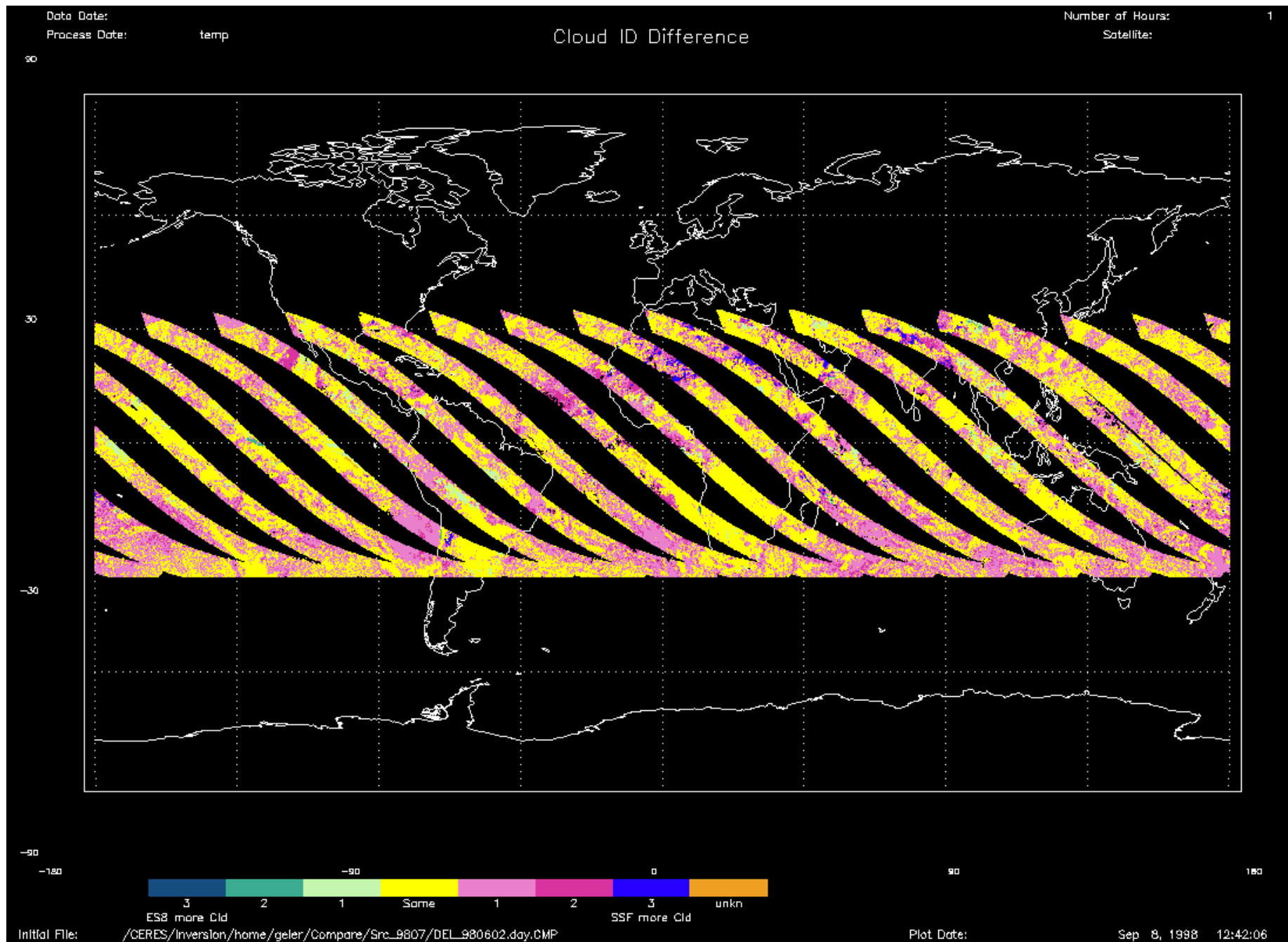
Current Status:

- **ValidationR2 version of SSF was produced for January 1998**
- **All February and March RAPS days were produced for ADM development**
- **HDF SSF read package available through DAAC ordering tool**
- **Select days of SSF were compared to ERBE-like ES-8 data product**

Near-term Plans:

- **Complete first cut of daily and hourly QC reports**
- **Append additional QC parameters to binary QC file**
- **Finish and release draft copy of the SSF Guide**

Scene ID Differences between ES-8 and SSF for TRMM 6/2/98



Working Group: SARB - Surface and Atmospheric Radiation Budget

Responsible for:

- **Subsystem 5.0 (Compute Surface and Atmospheric Fluxes)**
- **Subsystem 7.2 (Synoptic Flux Computation)**
- **Subsystem 12.0 (Regrid MOA)**

Data Products:

- **CRS (Single Satellite Footprint, and Radiative Fluxes and Clouds)**
- **SYN (Synoptic Radiative Fluxes and Clouds)**
- **MOA (Meteorological, Ozone, and Aerosol)**
- **MWH, APD, GAP, OPD External Ancillary Data Inputs**

Current Status:

- **Subsystems 5.0 and 12.0 in production at the Langley DAAC**
- **Obtaining January and June 1986 data from DAO in GEOS-2 format for comparison studies**
- **Processed all available January 1998 data through Subsystem 5.0**
- **Updating to current version of Fu-Liou model with additions of new window absorption K's and CKD2.1 LW continuum absorption, window fluxes and radiances, TRMM filtered window, and total LW radiances**

Near-term Plans:

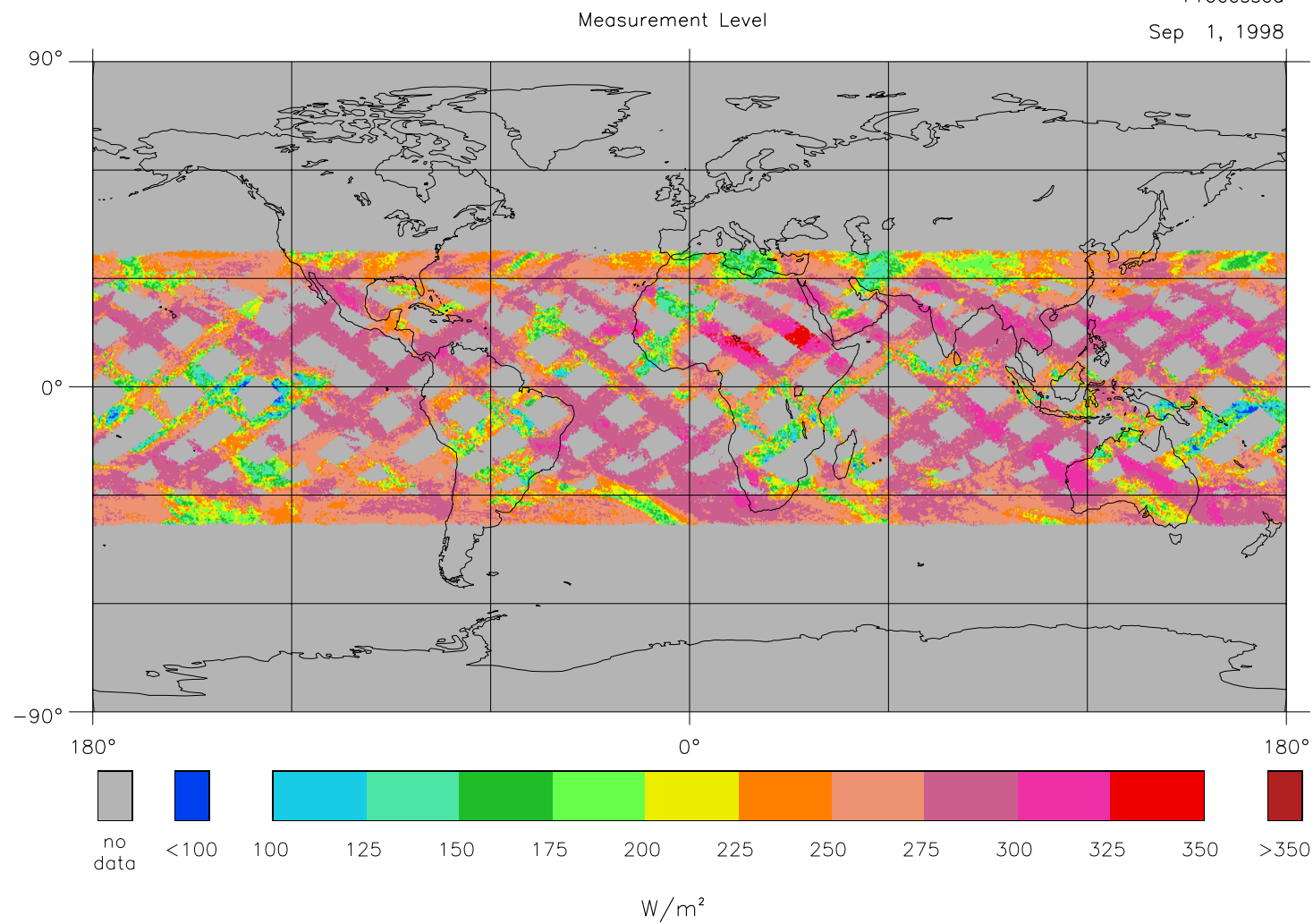
- **Update constraint algorithm to use Total and Window LW radiances and fluxes; adjust PW for pressures greater than 500 hPa, and adjust the upper tropospheric relative humidity for pressures less than 500 hPa**
- **Replace the Staylor surface albedo retrieval with one based on Fu-Liou**

LW Flux, upwards, totalsky, TOA from CERES CRS Processing

TRMM January 2, 1998 CRS

Processed

Sep 1, 1998



Working Group: TISA - Time Interpolation and Spatial Averaging

Responsible for:

- Subsystem 6 (Hourly Gridded Single Satellite Fluxes and Clouds)
- Subsystem 7.1 (Time Interpolation for Single and Multiple Satellites)
- Subsystem 8 (Compute Regional, Zonal and Global Averages)
- Subsystem 9 (Grid TOA and Surface Fluxes)
- Subsystem 10 (Compute Monthly and Regional TOA and SRB Averages)
- Subsystem 11 (Grid Geostationary Narrowband Radiances)

Data Products:

- FSW - Hourly Gridded Single Satellite Fluxes and Clouds (Subsystem 6)
- SYN - Synoptic Radiative Fluxes and Clouds (Subsystem 7)
- AVG, ZAVG - Monthly Regional, Zonal and Global Radiative Fluxes and Clouds (Subsystem 8)
- SFC - Hourly Gridded Single Satellite TOA and Surface Fluxes (Subsystem 9)
- SRBAVG - Monthly Regional TOA and SRB Averages (Subsystem 10)
- GGEO - Ancillary Data Product: Gridded Geostationary Data (Subsystem 11)

Current Status:

- Completed the implementation and testing of the hour and month overlap logic for Subsystem 9 (local hours)
- Completed testing the precipitable water, cloud column weighted, and cloud layer algorithms
- Produced read software for the TISA Gridding products
- Surface directional models were implemented into SS 7.1
- Plot files for posting on the web following production processing were implemented
- QC reports were implemented in the main and post processors for GGEO (SS 11)
- Subsystems 6, 9, and 11 have started processing at the DAAC

Near-Term Plans:

- Production processing for Subsystems 7.1, 8.0 and 10.0 should start at the DAAC
- Implement a test to filter bad raw data from the GOES-8 satellite
- Modify code to handle the satellite replacement of GOES-9 with GOES-10
- Complete Operator's Manuals for the DAAC operations staff

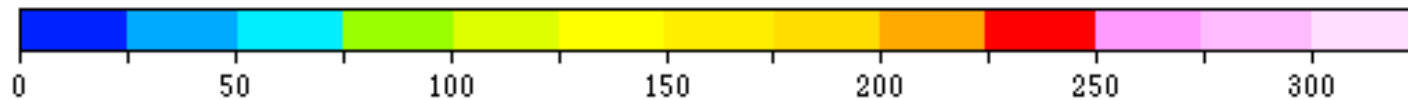
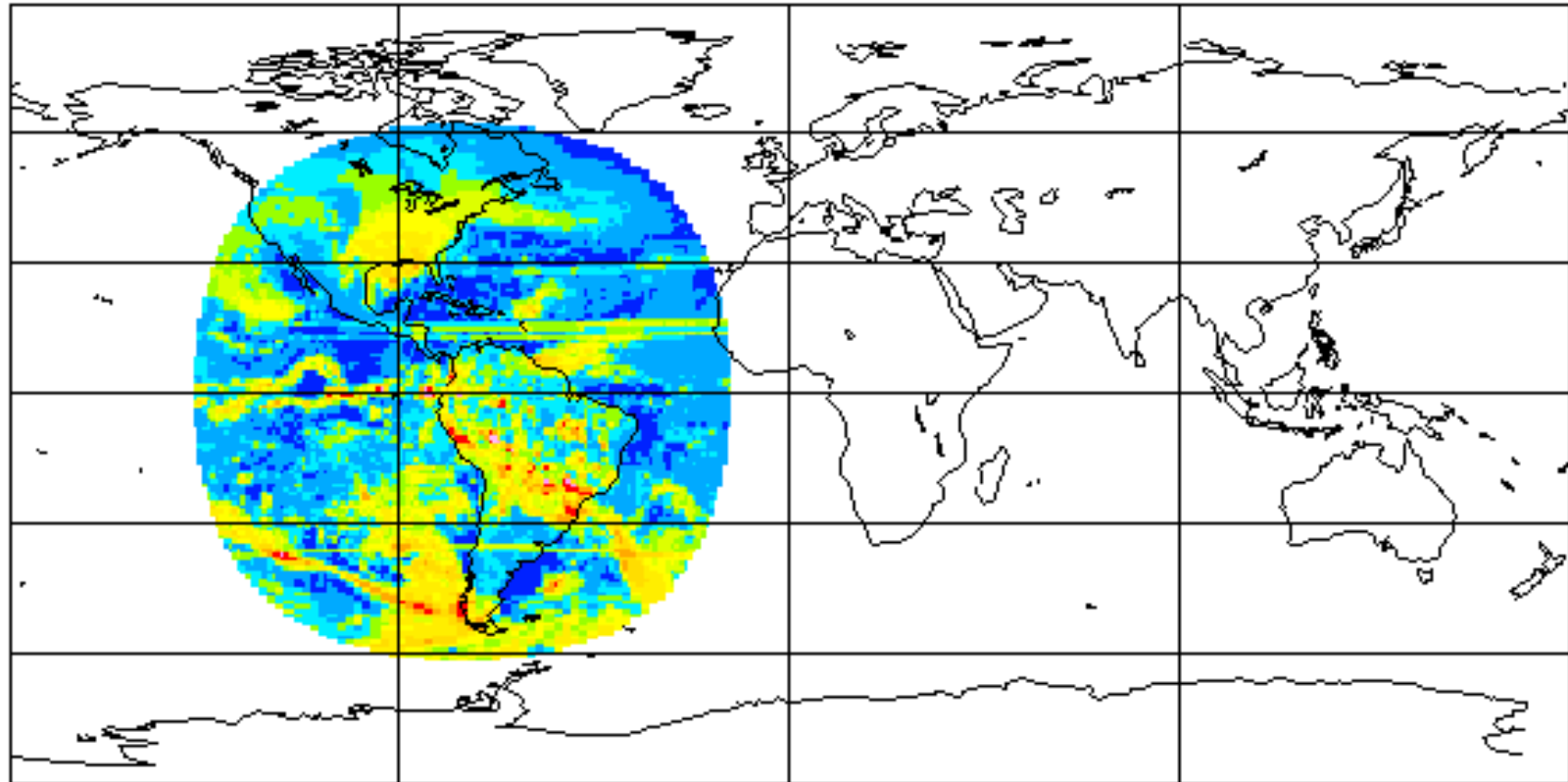
Mean Visible Radiance From CERES Processing

GOES-8 January 1998 GGEO

Processed: 1998/08/31

1-deg Equal Angle Nested

Day: 07 Hour: 19



Watts/Meter²/sr¹

GOES-8 Streaks -- Uncorrected

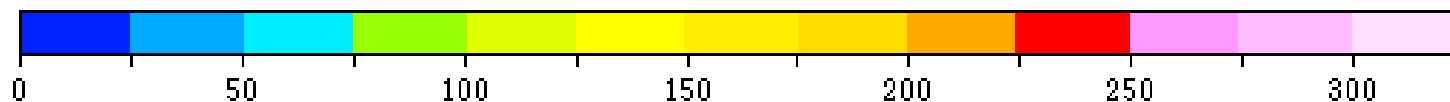
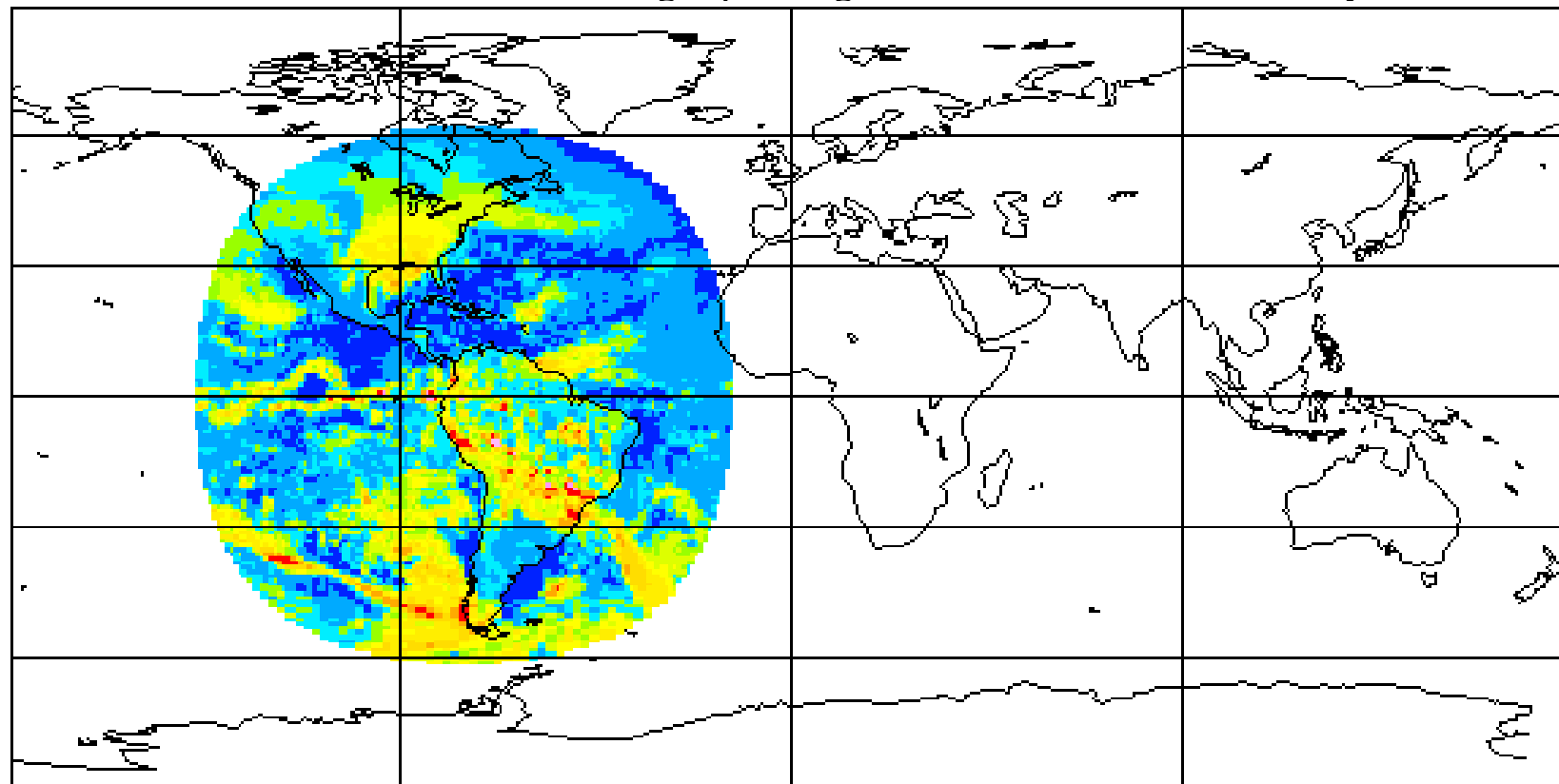
Mean Visible Radiance From CERES Processing

GOES-8 January 1998 GGEO

Processed: 1998/08/28

1-deg Equal Angle Nested

Day: 07 Hour: 19



Watts/Meter²/sr¹

GOES-8 Streaks -- Corrected

CERES System Engineering Committee

Charter: Coordinate solutions to issues which cross working group boundaries

Members: Maria Mitchum (DMO), Sandy Nolan (SAIC), Jill Travers (DAAC)

Issues Resolved:

- Documented 'CERES File Management Policy' with instructions to the DAAC for the disposition of ALL CERES generated output products (over 55,000 files per month)
- Established 'Web Request Form' for World/Science Team viewable CERES products and associated key search-parameter lists
- Documented 'CERES Processing Time Line' Scenario
- Designed template and sample document for the DAAC Operator's Manual for a PGE
- Held a LaTIS Review which covered: Current Manual Production Generation, Architectural Design of the Automated System, and Automated System Development Status
- DAAC supplied two utilities to enable Working Groups to access files from the DAAC Archives 'on an as needed basis'

Current Issues:

- Collecting Processing Details for 43 Processors (on-going)
- EOS AM1 Level Zero/Ephemeris/Attitude details and MODIS requirements under discussion
- Streamlining DAAC Delivery Memo, Test Plan, and Operator's Manual to remove redundancy
- Monitoring 'DAAC Wish List' - preliminary steps to an Automated System:
 1. Build Data Base Table for metadata (.met files) needed for automated processing
 2. Build Data Base Table for renaming ingested External Ancillary Data Set files
 3. Build Data Base Table for tracking external changes affecting a PGE {i.e. Toolkit, CERESlib}
 4. Build special partition on non-production storage device to house all Web data/plot files

Validation and Visualization Aids

Develop tools for visualizing CERES data products to assist software development and support production processing and validation - understand the data and identify discrepancies

Features:

- **Interactive visualization and analysis**
- **Visualize CERES archival and validation data products**

Current Status:

- **IDL code for HDF data product analysis (BDS, IES, ES-8, ES-9, ES-4, SSF, CRS, MODIS)**
- **IBM Data Explorer (DX) programs for Earth-viewing measurements (IES, BDS, SSF, ES-8)**
- **Coastline Detection Program for CERES geolocation accuracy assessment**
 - **Development underway to automate this process**
- **DX programs for CloudVis and Gridded Cloud validation**
- **IDL and GrADS for gridded products**
 - **Displays Cloudvis product in ungridded (swath) and global gridded formats**
 - **Displays ES-4 HDF product**

Benefits and Findings:

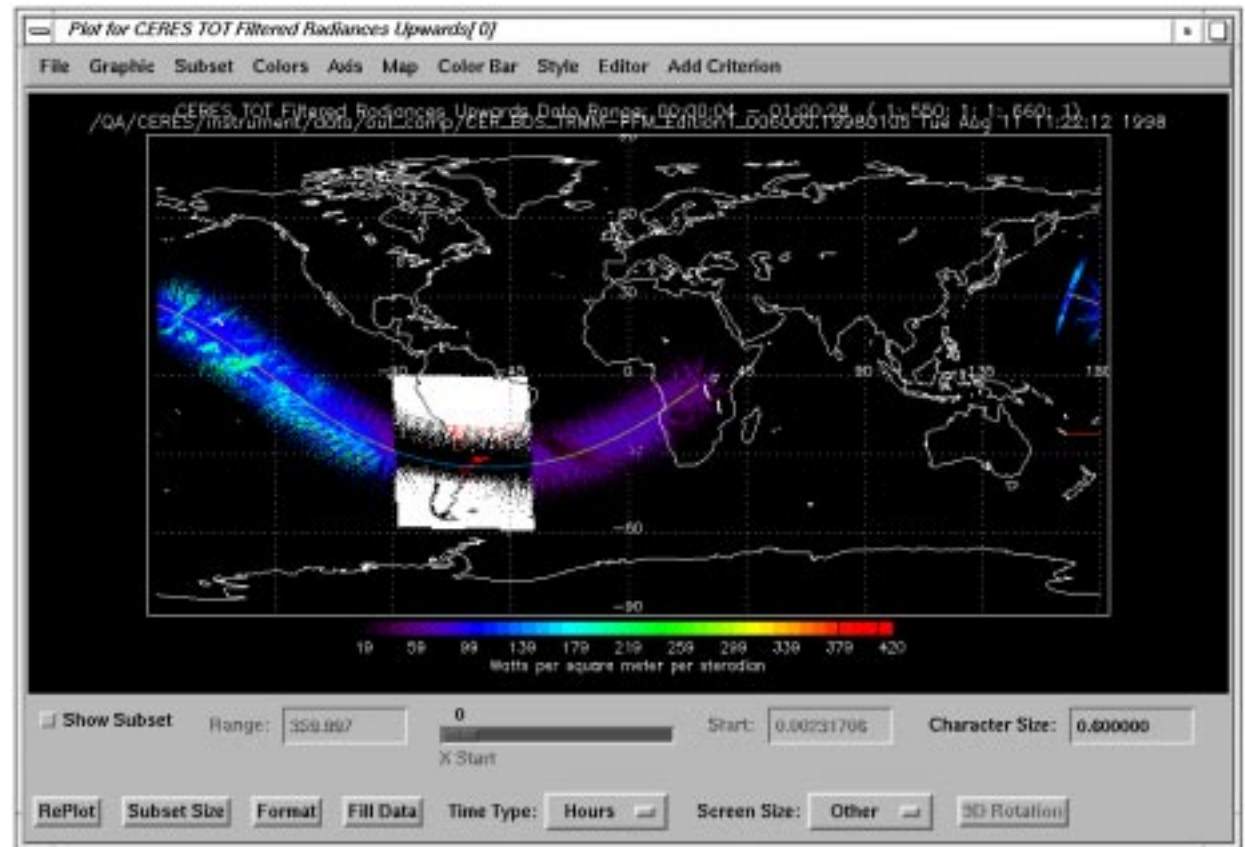
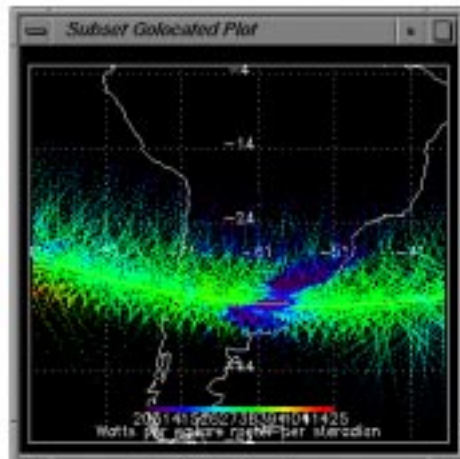
- **Provided easy access to TRMM science data products for analysis and plotting**
- **IDL View_hdf tool delivered to DAAC for distribution to science users**
 - **Distributed to CSU, Scripps, LMD for CERES use**
- **Cloud WG continues to use DX, IDL, and view_hdf for data validation**

view_hdf User's Guide

URL: http://http://asd-www.larc.nasa.gov/ceres/collect_guide/list.html

“Select Region”: Select a region of the geolocated plot. Move the cursor to the location and click the left button at positions A, B,C, and D. Close this region by clicking right mouse button at position D.

A “Geolocated Plot” for the selected region is shown.



Science Computing Facilities

Development, integration and testing server (lightning)

- **SGI Origin 2000 (IRIX 6.4) configured to match DAAC (LaTIS) as closely as possible**
- **Had intermittent failures since installation in 1997**
- **Extensive effort this summer by SCF staff and SGI to find and solve problems**
- **Replaced all components except disk drives**

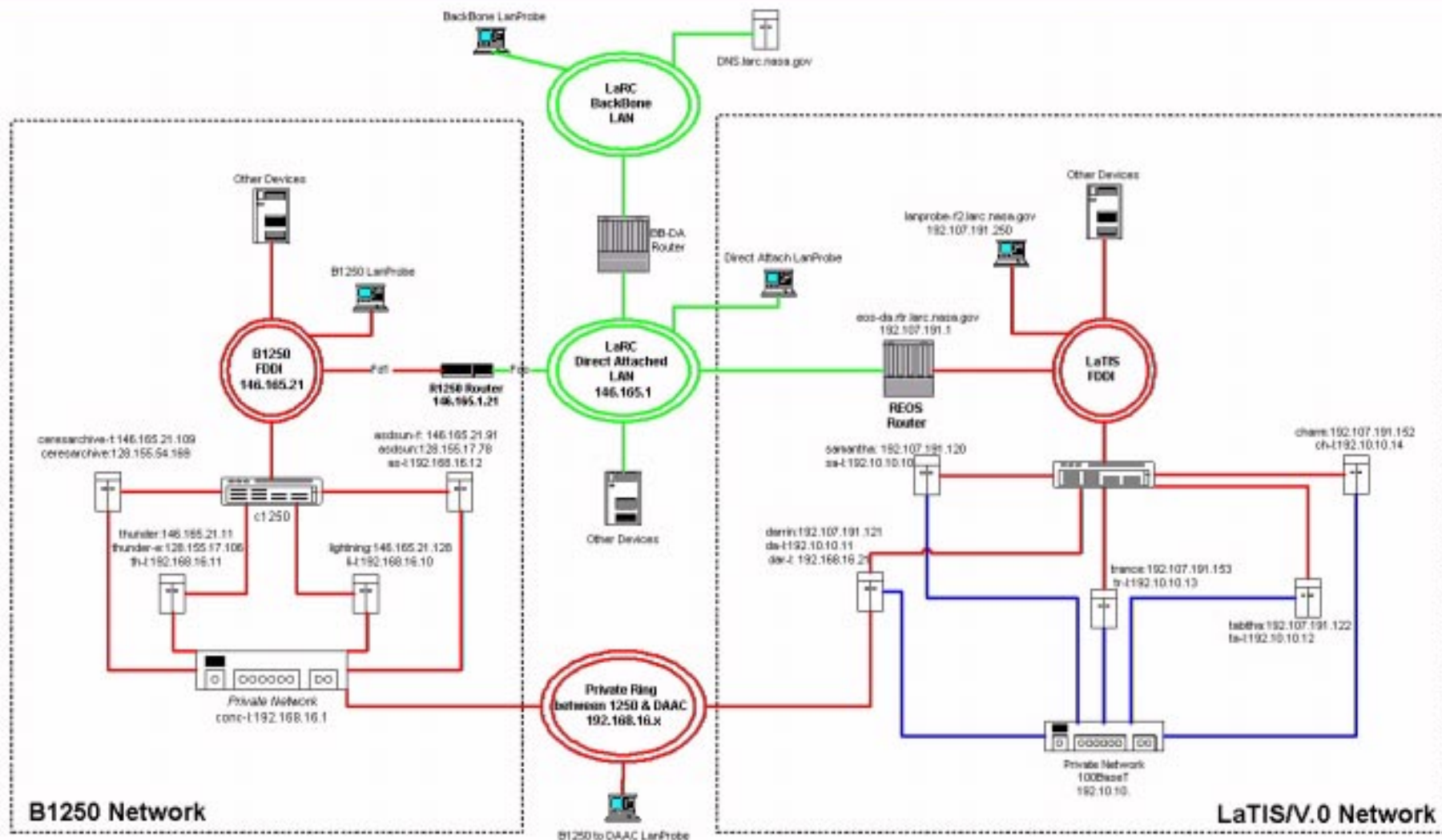
Visualization and validation server (asdsun - completed configuration)

- **Sun Enterprise 5000 currently with 8 336-MHz processors**

On/Off-site LAN and WAN network upgrades

- **Dedicated FDDI interface between DAAC and SCF being installed for improved transfer rates**
- **Local FDDI link now in use to cluster servers (thunder, lightning, asdsun, & ceres-archive)**

Improving the flow of data from the DAAC to the SCF



LaRC EOS DAAC to 1250 Baseline Configuration

DWG NO.	LARCHB-JLG-001	REV.	A
DWG BY:	Jerry L. Garcia	DATE:	7/16/98

CERES Post-Launch DAAC Production Measurements - 8/27/98

One execution on LaTIS configuration of each PGE for actual production of January 5, 1998 (Hr 00 if hourly) TRMM data.

SS	PGE	Compiler	Date	Time, sec			Block I/O		Mem- ory, MB	Disk Storage, MB			Runs per Mnth
				Wall	User	Sys	In	Out		In	Int	Arch	
1.0	Instrument (1.1P1)	Ada	04/06	17691	17174	200	81102	9655	317	210	887	1561	31
2.0	Daily TOA Inversion(All)	SGIF90	06/09	2771	2066	344	57586	56	73	284	0	986	31
3.0	Monthly Averaging(All)	SGIF90	06/11	660	549	96	2117	262	52	119	0	138	1
4.1-4.4	Surfmap (4.1-4.0P1)	SGIF90	07/03	5	2	1	496	4	64	2	0	5	31
4.1-4.4	Cld Ret/Ftprnt (4.1-4.1P1)	SGIF90	07/03	5529	5227	84	26891	25	430	313	757	168	744
4.1-4.4	CRH Update (4.1-4.2P1)	SGIF90	07/03	22	18	1	1367	7	43	9	0	19	31
4.5-4.6	TOA/Surf Flx (4.5-61P1)	SGIF90	07/04	1311	351	906	3110	8	5	214	0	200	744
4.5-4.6	TOA/Surf Flx (4.5-6.2P1)	SGIF90	07/05	48	3	8	3097	6	16	193	0	197	744
5.0	Inst. SARB (5.1P1)	SGIF90	07/15	9948	9810	47	3374	5	23	278	0	240	744
5.0	Inst. SARB (5.2P1)	SGIF90	07/15	6458	186	6113	5384	466	20	240	0	273	744
7.2	Synoptic SARB												
12.0	MOA Regridding (12.1P1)	NAG 32	02/06	1737	1666	38	36102	30	45	43	0	320	31

CERES Post-Launch DAAC Production Measurements - 8/27/98

One execution on LaTIS configuration of each PGE for actual production of January 5, 1998 (Hr 00 if hourly) TRMM data.

SS	PGE	Compiler	Date	Time, sec			Block I/O		Mem-ory, MB	Disk Storage, MB			Runs per Mnth
				Wall	User	Sys	In	Out		In	Int	Arch	
6.0	Synoptic Gridding (6.1P1)	NAG 32	08/26	66	16	29	4203	3	89	6004	1	0	744
6.0	Sort FSW Files(6.2P1)	NAG 32	08/28	719	220	289	41774	75	499	2970	0	2114	1
6.0	FSW HDF (6.3P1)	NAG 32	08/28	1098	640	436	32300	52	138	2114	0	2110	1
9.0	Post MOA (9.1P1)	NAG 32	08/20	27160	14194	8753	288014	6	397	9920	0	5764	1
9.0	Surface Gridding (9.2P1)	NAG 32	08/21	44	12	29	3607	3	121	5964	1	0	744
9.0	Sort SFC Files (9.3P1)	NAG 32	08/28	384	148	173	17885	74	497	1385	0	824	1
9.0	SFC HDF (9.4P1)	NAG 32	08/28	463	252	199	12450	27	105	824	0	810	1
11.0	Grid GOES-8 (11.1P1)	NAG 32	08/11	84712	83843	172	32470	4	856	2125	178	0	1
11.0	Grid GOES-9 (11.1P2)	NAG 32	08/11	85885	84923	183	41179	4	805	2740	183	0	1
11.0	Grid GMS (11.1P4)	NAG 32	08/10	80884	80133	150	18187	4	25	1272	185	0	1
11.0	Grid Meteosat (11.1P3)	NAG 32	08/13	75985	75090	172	18408	4	23	1180	185	0	1
11.0	Sort GGEO (11.2P1)	NAG 32	08/14	18073	13486	4365	16517	5115	1709	731	0	568	1
7.1	Synoptic Interpolate												
8.0	Synoptic Averaging												
10.0	TOA/SRB Averaging												
System Total													

Some PGE's will require substantially more resources for each instrument on EOS-AM and EOS-PM

CERES Post-Launch Processing Time Summary - 9/98

Number of wall-clock hours required to run one month of data through each subsystem

SS	PGE	Runs/ Month	Release 1	Release 2	Post-Launch	
			9/96	10/97	4/98	9/98
1.0-3.0	Instrument/ERBE-like	31	83	134	175	176
4.1-4.4	Clouds/Convolution	744	1687	952	1351	1143
4.5-4.6	TOA/Surface Flux	744	12	30	(30)	281
5.0	Instantaneous SARB	744	10731	5611	(5611)	3391
6.0	Atmospheric Gridding	744	789	124	(124)	14
7.2	Synoptic SARB	248	187	(187)	(187)	(187)
9.0	Surface Gridding	744	786	108	(108)	17
11.0	Grid Geostationary	5	4	(4)	(4)	96
	Remaining PGE's		7	94	(94)	(94)
Total hours for one month of data			14286	7244	7684	5399
Number of CPU chips at 80%			25	13	14	10

- Release 1 measurements scaled from R8000 to R10000 chips and NAG to SGI compilers
- The LaTIS computer used for CERES processing has 32 CPU chips, thus reprocessing capacity

Current Processing Issues for Each Working Group

System-Wide:

- **Support the DAAC on automating each PGE and streamlining operations**
- **Finalize Data Set Guides for each science product**
- **Complete Operator's manuals for each PGE for the DAAC operations staff**

Instrument:

- **Support analysis of TRMM +15 volt problem**
- **Redeliver subsystem for complete TRMM data reprocessing**
 - **correct window channel spectral width (Use 3.7 instead of 3.6)**
 - **option for instrument parameter processing only for anomaly investigation**
- **Verification of EOS-AM input file formats (Level 0, ephemeris/attitude, rename files)**
- **Analysis of thermal vacuum test and simulation results from both instruments on EOS-AM**

ERBE-Like:

- **New Spectral Correction Coefficients and As and Bs for tropical constant**
- **Complete HDF validation software**
- **Re-process TRMM data since launch and archive results**

Clouds:

- **Optimize nighttime cloud property algorithm and move into production**
- **Continue development and testing of MODIS data sets for EOS-AM1**

Current Processing Issues for Each Working Group

Inversion/Surface Estimation:

- **Waiting for updates to Ramanathan and Staylor algorithms**
- **May revise SSF to use a separate SDS (HDF data structure) for each parameter**
- **Need to get serious about reviewing QC reports**
- **Examine all SSF parameters from selected granules produced at DAAC**

SARB:

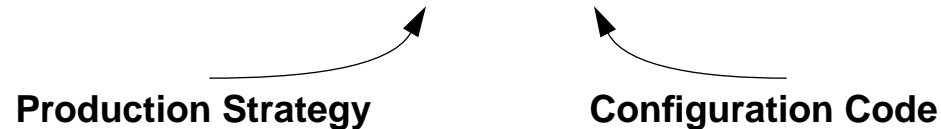
- **Considering use of ECMWF atmospheric profiles in MOA**
- **Inclusion of Surface Albedo History for cloudy sky first guess**
- **Considering adjusting GEOS-2 precipitable water over oceans with SSM/I value**
- **Enhance validation tools and continue validating MOA, CRS, and SYN output files**

TISA:

- **Complete initial testing of all gridding and averaging subsystems**
- **Continue validation of output products**

What are all these versions?

A sample file name: CER_BDS_TRMM-PFM_Edition1_006000.19980411



AtLaunch:

- Quick-look results
- No corrections
- Don't use for anything serious!

ValidationR1:

- DAC update correction for rapid thermal changes at sunrise/sunset
- Proper coefficients for each channel rather than placeholders

ValidationR2:

- Deep-space calibration zero-radiance offsets
- 2nd time constant numerical filter
- Revised shortwave gain (1.8%)
- First set of revisions to spectral correction coefficients

Edition1:

- 'Final' version of Instrument and Erbe_like Subsystem output
- Includes over 30 changes identified after launch
- Should be stable for a while (until the next glitch!)
- Minor re-processing will bump the configuration code
- Major re-processing will have a new production strategy

Near-Term Plans

- **Redeliver Instrument Subsystem on September 11, 1998**
- **Rerun Instrument Subsystem after Science Team Meeting**
 - Dataset from Jan through August 1998
 - Instrument reprocessing will take about 1 week
- **Finalize ERBE-like Subsystems**
 - Redeliver after Science Team Meeting
 - Rerun TRMM data from January through August 1998
 - Archive ERBE-like products
- **Continue running Instrument and ERBE-like Subsystems when data collection resumes**
- **Complete processing of gridded and averaged products at the DAAC**
- **Update documentation on system and data products**
- **Work with DAAC to automate and streamline production processing**
- **Continue EOS-AM1 modifications and testing**